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FACSIMILE TRANSMITTAL SHEET

TO:	FROM:
Mail Stop AF - Examiner Syed Zia	Craig G. Holmes
COMPANY:	DATE:
USPTO - Group Art Unit No. 2131	APRIL 28, 2005
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INTERVIEW SUMMARY	09/408,420

☒ URGENT ☐ FOR REVIEW ☐ PLEASE COMMENT ☐ PLEASE REPLY ☐ PLEASE RECYCLE

NOTES/COMMENTS:

EXPEDITED PROCEDURE

Attached for facsimile filing are:

1. Interview Summary (5 pages)
2. No Fee Transmittal Sheet (1 page) (in duplicate)
3. Facsimile Cover Sheet

Please contact Craig G. Holmes at (408) 414-1207 with any questions.
Thank you for your assistance in this matter.

Craig G. Holmes


PLEASE ACKNOWLEDGE AND CONFIRM RECEIPT VIA FACSIMILE AT (408) 414-1076.

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PTO/SB/17 (12/04)

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Name (Print/Type) CRAIG G. HOLMES		Telephone (408) 414-1080																																																																																																																																																																																																	
Signature 		Date April 28, 2005																																																																																																																																																																																																	

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APR 28 2005

Docket No. 50325-0076 (1417)

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	:	Confirmation No.: 4033
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Sunil K. Srivastava	:	Group Art Unit: 2131
	:	
Serial No.: 09/408,420	:	Examiner: Syed Zia
	:	
Filed: September 29, 1999	:	
	:	
For: METHOD FOR OVERCOMING THE	:	
SINGLE POINT OF FAILURE OF THE	:	
CENTRAL GROUP CONTROLLER IN A	:	
BINARY TREE GROUP KEY EXCHANGE	:	
APPROACH	:	

INTERVIEW SUMMARY

Hon. Commissioner for Patents
Mail Stop AF
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The Applicant thanks the Examiner for the Interview conducted by telephone on April 21, 2005. The interview was between Examiner Syed Zia and the applicant's attorney, Craig G. Holmes. Pending Claim 1 that was rejected in the Final Office Action mailed on February 10, 2005 was discussed. While Claim 1 was rejected in the Final Office Action under 35 U.S.C. § 103(a) as allegedly anticipated by U.S. Patent Number 5,748,736 issued to Mittra ("*Mittra*") in view of U.S. Patent Number 6,745,243 issued to Squire et al ("*Squire*"), the discussion during the interview focused on the cited portions of *Mittra* used in rejecting Claim 1, as discussed in detail below. No agreement was reached.

The Applicant began by explaining that Claim 1 features a plurality of group controllers, and the Applicant noted that Claim 1 specifically recites three group controllers: a first group controller that is first introduced in the "joining" step, a second group controller that is first introduced in the "establishing" step, and a third group controller that is first introduced in the "distributing" step. Each of these three group controllers are recited as

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being "of the plurality of group controllers," and Claim 1 expressly recites that "each group controller of the plurality of group controllers is a replica of a particular group controller..." so that there is no "single point of failure..."

The Applicant explained that, as a result, Claim 1 is unlike prior approaches that feature a single group controller and therefore are susceptible to a failure of the multicast group is the single group controller fails because the approach of Claim 1 avoids this "single failure" problem through the use of the plurality of group controllers. For example, the failure of one group controller does not result in the failure of the multicast because another group controller in the plurality of group controllers can manage the multicast group.

The Applicant then explained that *Mittra* is typical of the prior approaches that are susceptible to a single failure because *Mittra* merely discloses a *single* group security controller (GSC), not a *plurality* of group controllers that includes *at least three* group controllers as featured in Claim 1. Furthermore, the Applicant pointed out that *Mittra* clearly and unambiguously explains that the "inventive 'secure multicast' group implemented by the FIG. 1 system is controlled by a *single* group security controller (GSC 111), and the inventive 'secure multicast' group implemented by each of the systems of FIGS. 2 and 3 is controlled by a *single* group security controller (GSC 11 or 211)." (Col. 6, lines 62-67; emphasis added.)

Next, the Applicant discussed how *Mittra* distinguishes between the single GSC and the members of the multicast when *Mittra* explains that there "are *three types of entities* participating in a secure multicast: senders, receivers, and a group security controller (GSC). The single GSC (e.g., GSC 111 of FIG. 1) provides key management and thus effectively controls [the] secure multicast group ("the group") membership. As far as the system is concerned, all that is required to begin a secure multicast is that the GSC is started up. Once this is done, senders and receivers apply to join the group..." (Col. 7, lines 28-35.) Thus, the Applicant explained that *Mittra* expressly distinguishes between the single GSC that controls the multicast group and the members of the multicast group, such as the senders and receivers. The Applicant pointed out that FIGS. 1, 2, and 3 of *Mittra* illustrate the single GSC at the top of the hierarchical structures depicted therein, with the senders and receivers denoted as nodes labeled "S" and "R," respectively.

The Applicant proceeded to address the rejection of the "joining" step of Claim 1, which was rejected in the Final Office Action based on Col. 7, lines 45-51 of *Mittra*. The Applicant explained that the cited portion of *Mittra* merely describes how a member, such as

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Interview Summary

a sender or receiver, joins the multicast group, whereas Claim 1 features "joining a first **group controller** to the plurality of group controllers..." (Emphasis added.) The Applicant explained that the Final Office Action appeared to be confusing the joining of a member to the multicast group as described in the cited portion of *Mittra* with the joining of a group controller to the plurality of group controllers as featured in the "joining" step of Claim 1.

Then the Applicant addressed the rejection of the "establishing" step of Claim 1, which was rejected in the Final Office Action based on Col. 7, lines 52-60 of *Mittra*. The Applicant explained that the cited portion of *Mittra* merely describes that "the GSC has full knowledge of the group membership and can communicate with each member separately and securely when required," such as by using "a separate secure channel." (Col. 7, lines 55-57; Col. 7, line 46.) Thus, the Applicant explained that the secure channel is between the single GSC and a member of the multicast, and not between "the first **group controller** and a second **group controller** of the plurality of group controllers" as featured in the "establishing" step of Claim 1. (Emphasis added.) The Applicant explained that the rejection of the "establishing" step of Claim 1 appeared to be confusing the interaction of a member of the multicast with the GSC and the claimed interaction via the secure communication channel between two group controllers of Claim 1. Thus, the Applicant noted that the rejections in the Final Office Action concerning both the "joining" and "establishing" steps appeared to be consistently confusing the members disclosed in *Mittra* with the group controllers featured in Claim 1.

The Examiner stated that a member of a multicast in *Mittra*, such as a sender or receiver, could also act as a group controller. However, the Examiner did not cite any portion of *Mittra* that supported this argument, and the Applicant is unaware of any such support in *Mittra*. Further, the Applicant explained that the argument that a sender or receiver in the approach of *Mittra* could also act as a group controller contradicted the clear descriptions of FIGS. 1, 2, and 3 of *Mittra* as including only a "**single**" group security controller.

The Examiner later stated towards the end of the interview that the plurality of group controllers of Claim 1 could be more clearly distinguished over *Mittra* if Claim 1 were amended to recite some sort of description of the plurality of group controllers, such as by reciting a feature or product name for the "invention" or perhaps even by amending Claim 1 to recite a trademark for the "invention" that would not be found in a subsequent search by the Examiner. The Applicant replied that the recitation of the plurality of group controllers was sufficient to distinguish Claim 1 over *Mittra* since only a single GSC is disclosed in *Mittra*.

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without any teaching or even a suggestion of using more than a single GSC. Thus, the Applicant and the Examiner failed to agree that the "joining" step of Claim 1 was distinguishable over *Mittra*.

The Applicant also addressed the rejection of Claim 1 based on *Mittra* relating to the "binary tree" featured in Claim 1, which is recited in Claim 1 as representing "the network nodes and the plurality of group controllers, in which leaf nodes of the binary tree represent network nodes that are joining or leaving the secure multicast or broadcast group, intermediate nodes represent other network nodes, and root nodes represent the plurality of group controllers." The Applicant noted that the "binary tree" is subsequently featured in the "creating and storing" step of Claim 1.

The Applicant then explained that the key feature of a binary tree is that each parent node has two and only two child nodes, as illustrated by the binary trees depicted in Figures 5, 6B, and 7B of the application. Thus, in working down a binary tree from the root node, there are only two nodes that branch off of each preceding or parent node. The Applicant noted that Claim 1 expressly features a "*binary* tree," not merely a tree or hierarchy in general, nor does Claim 1 feature merely a binary branch of a tree that has other non-binary branches.

The Applicant then addressed the Final Office Action's citations of FIGS. 1-3, Col. 6, lines 4-45, and Col. 8, lines 45-67 as allegedly disclosing a binary tree. The Applicant explained that the hierarchical structure employed by *Mittra* and illustrated in FIGS. 1, 2, and 3, while disclosing a tree-like arrangement, is not a binary tree. The Applicant noted that while some portions of FIGS. 1, 2, and 3 illustrate some parent nodes with two child nodes (e.g., Multicast/Unicast Networks 112C, 112E, and 112F of FIG. 1), other parent nodes have more than two child nodes, such as Multicast/Unicast Networks 112A, 112B, and 112C. Thus, while some branches of the tree in FIG. 1 could be characterized as binary branches, other branches are clearly not binary, and therefore, FIGS. 1, 2, and 3 do not disclose a binary tree as featured in Claim 1.

The Examiner responded that the tree depicted in FIGS. 1, 2, and 3 could be traversed using only two child nodes at each parent node, thereby effectively ignoring any additional child nodes beyond two child nodes for those parent nodes illustrated as having more than two child nodes. The Examiner concluded that as a result of that interpretation, FIG. 1 could be considered as disclosing a binary tree as featured in Claim 1. Using this interpretation by the Examiner in traversing FIG. 1, one would traverse the tree from Multicast/Unicast

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Network 112A to sender 113A and receiver 114A, ignoring TI 115A, 115B, 115C and receiver 114B. Or alternatively, one would traverse the tree of FIG. 1 from Multicast/Unicast Network 112A to TI 115A and TI 115C, ignoring sender 113A, receivers 114A, 114B, and TI 115B.

The Applicant replied that the Examiner's interpretation of traversing FIG. 1 using only two child nodes per parent node would ignore whole sections of the tree depicted in FIG. 1, which is illogical. If the tree in FIG. 1 truly represented a binary tree, there would have to be considerably more intermediate nodes between Multicast/Unicast Network 112A and sender 113A, receivers 114A, 114B, and TI 115A, 115B, and 115C, which is clearly not the case in either FIG. 1 of *Mittra* or in either of the trees depicted in FIGS. 2 or 3 of *Mittra*. Thus, the Applicant and the Examiner failed to agree that the "binary tree" featured in Claim 1 was distinguishable over *Mittra*.

The Examiner is respectfully requested to contact the undersigned by telephone if it is believed that such contact would further the examination of the present application.

To the extent necessary to make this reply timely filed, the Applicant petitions for an extension of time under 37 C.F.R. § 1.136.

If any applicable fee is missing or insufficient, throughout the pendency of this application, the Commissioner is hereby authorized to any applicable fees and to credit any overpayments to our Deposit Account No. 50-1302.

Respectfully submitted,

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On 4/28/05

By

